

# ***ENERGY FROM WASTE SUSTAINABILITY PROJECT***

## ***NOTES FROM THE DARWIN STAKEHOLDER WORKSHOP***

**Held:** Tuesday 22<sup>nd</sup> October 2002

**Time:** 9.00 am until 12.00 pm

**Venue:** Darwin City Council Civic Centre

(Training Room 1) Harry Chan Avenue, Darwin.

For more information on the Energy from Waste Sustainability Project please visit the project website:

***[www.wmaa.asn.au/efw/home.html](http://www.wmaa.asn.au/efw/home.html)***

Or contact the Project Manager,  
Matthew Warnken  
Phone: (02) 9571 4800  
Email: [matthew@warnkenise.com.au](mailto:matthew@warnkenise.com.au)

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This project is an initiative of the:

***Energy from Waste Division of the  
WASTE MANAGEMENT  
ASSOCIATION OF AUSTRALIA***

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## **Introduction**

There are a number of issues and concerns associated with energy from waste projects. On the positive side, recovering energy from waste can generate renewable electricity, reduce the amount of waste disposed of to landfill and reduce greenhouse gas emissions. However, there are also potential negative environmental and human health effects associated with energy from waste projects.

The Energy from Waste Division of the Waste Management Association of Australia, with assistance from Commonwealth funding through the Australian Greenhouse Office, initiated the process of developing a Sustainability Guide to resolve these issues. Part of this process was a national series of eleven stakeholder workshops.

The purpose of the stakeholder workshops was to ensure that all of the positive and negative factors associated with Energy from Waste (EfW) projects were identified and then incorporated and resolved within a Sustainability Guide for EfW. It is intended that the Guide will be used to ensure that Energy from Waste projects maximise benefits and minimise negative impacts in a way that supports the sustainable development of Australian society.

Below are the issues that were identified at the Darwin Stakeholder Workshop. These issues will be integrated into a final report, representing all of the issues raised by workshop participants at this and the other ten national workshops.

The issues identified at the workshop will be used as a “yardstick” against which the Sustainability Guide will be measured, both to ensure that all issues have been addressed in the Guide, and to ensure that the philosophical basis of the Guide is correct.

## **Round Table Discussion**

There were 14 participants at the Darwin Stakeholder Workshop. (A participant list is included as Appendix 1). Participants were seated around two tables to discuss issues related to Energy from Waste. The summary of the discussion from these five tables was recorded onto over-head transparencies and is presented below exactly as scribed.

A catalogue of issues recorded by participants onto flash-cards is included as Appendix 2. These issues are also presented exactly as scribed. The colour of the flash-cards was used to differentiate between tables.

## **Orange Table**

### TECHNOLOGY

- Information Gaps
- Lack of Local Research
- Cyclone Proofing

### INFRASTRUCTURE

- Segregation of Waste
- Control of Landfill
- Centralisation of Waste Facility
- Lack of Treatment Facility

### LOSS OF RECYCLING

### LEGISLATION

- Accredited Sources
- Constant Changes
- Restrictions (Biodiesel)
- Keeping Pace with Initiatives

### FUNDING INITIATIVES

- Tax Disincentives (Excise)
- Mining Not Pay Excise
- Funding Programs

### GREENHOUSE

- Value of Emissions
  - Carbon Trading

### MARKETING ISSUES

- Sale of Energy
- Green Energy Vs REC's
- Community Service Obligation.

### REMOTENESS

- Distance Between Centres
- Cost of Transport vs. Energy Extracted

### COST EFFECTIVENESS

- Competing Energy Sources
- Transmission
- Volumes of Waste Available

### POTENTIAL WASTE SOURCES

- Waste Oil
- Mimosa pigra
- Sewerage Effluent
- Palm Fronds
- General Tip Waste
- Tyres

### ISSUES

- Medical Waste
- Environmental Considerations
- Dioxins
- Emissions

**Blue Table**FEEDSTOCK

- Control of Feedstock
- Utilising all materials appropriately.
- Quality of input – output

EFFICIENCY

- Energy in vs. energy out
- Transport cost - net
- Solutions for various situations
  - Small comms.
  - Different technological solutions for different scale.

SOCIAL

- involvement of community
  - Need to be informed to make best decision
- account for → “TOTAL COST” (sustainability)
- community expectations
- community must trust information
- community must trust information
- community acceptance ‘\$’
- is WTE stimulating waste generation.
- Need to address consumerism

LANDFILL VS. WTE

- Is landfill so bad
- Drivers for each

GENERAL

- Is WTE best use of materials.
- Can we make energy in better ways
- Role of E from waste in management of organics
- Affordability of integrated approach.

**Results of Citizen’s Jury**

The results of the citizen’s jury are listed in the table below.

<b>Table</b>	<b>Strongly No</b> EfW has <b>no</b> role to play in any form	<b>Contingent</b> EfW has a role to play but that role is determined on case by case issues	<b>Strongly Yes</b> EfW <b>always</b> has a role to play in any form
Orange	0	$(1^{\#} + 1) = 2$	$(1^{\Delta} + 1^* + 1^{\diamond}) = 3$
Blue	0	6	0
<b>Totals</b>	0	8	3

**General comments from the tables regarding energy from waste**

Orange Table

- # - Take into account enviro factors
- Δ - If \$ are not an issue
- \* - Exception of mass burn incineration
- ◇ - If economics stack up

Blue Table

No Comments.

**Appendix 1 – Darwin Workshop Participants**

<b><i>Name</i></b>	<b><i>Organisation</i></b>
Bronwyn Callaghan	NTCCI
Marty Davy	Adelaide River
Mark Glover	Renewed Fuels P/L & Chairman of the Energy from Waste Division
Chris Horsey	Darwin City Council
Jun Mu	Collex Pty. Ltd.
Peter Muller	URS
Zoe Pilven	NTCCI
Matthew Pitt	
Greg Smith	Wastemaster
Horst Walter	
Matthew Warnken	Warnken I.S.E. P/L - Project Manager and Workshop Facilitator
Bruce Webster	Power and Water Corporation
Oliver Woldring	Dept of Infrastructure, Planning and Environment
Carolynne Yates	Dept Infrastructure, Planning and Environment

**Appendix 2 – Catalogue of Issues Identified at the Darwin Workshop**Orange Table

- How will energy (electricity) be marketed/distributed.
- Remote Communities
- Transport of wastes – Economics
- Distance
- Cost Factors – Isolation
- Is the scale of waste management adequate to support waste to energy processes.
- Volumes of waste available
- Transmission
- Facilities (Treatment) all located in other states
- Cost of Freight Versus Energy to be extracted from Bio-mass is very high.
- Cost Effectiveness of EfW Systems for Electricity ie: c/kWh EfW vs. c/kWh Nat. Gas
- Existing Recycling services
  - established
  - threatened
  - prevented

by EfW.

- Lack of treatment Facilities
  - Recycling Facilities
  - Legislation is lagging behind compared to other states
  - Cooking Oil to
- Loss of recycling?
  - Reduced incentive to reduce waste.
- Control of Landfill disposal
- Regional Waste Facility
- Segregation of Waste

- Cyclone proofing?
- Lack of Technology Information/Providers (or Knowledge of them)
- Apparent lack of research
- Greenhouse gas emission abatement potential?
  - Lack of technical info.
  - If CO<sub>2</sub> e is tradable how will this affect project viability?
- Mining Industry
- Tax Incentives – Disincentives?
  - (cf. mining companies diesel fuel with no excise)
- funding incentives
- government regulations keeping pact with initiatives
- Legislation Restrictions to biodiesel
- Accredited renewable Energy Sources - need clear identification
- Methane Recovery from effluent in residential suburb.
- Mimosa Pigra
- Waste Oil
- Emissions from the burning of waste oil + other wastes
- Environmental impacts. Esp. dioxins...
- Medical Waste

#### Blue Table

- What are the Drivers for Waste to Energy.
  - Political
  - View to move away from Landfill
- Community paying for Sustainability
  - Communications/marketing
  - Acceptability

- Is Landfill space a problem?
  - ie: a Driver for Alternative waste management options
  - Political
  - Social
- Why is landfill bad?
  - Are there situations where landfill is the best option.
- Economic Drivers
  - Cost modelling ie: landfill vs. Waste to Energy or preferably combination of Waste to energy, composting and other technologies.
- Integrating Waste to Energy with Landfill gas extraction projects.
- Drivers of sustainability have constraints in Local, Territory & Federal govt.
  - Community expectations for sustainability
  - Cost to achieve sustainable actions/projects.
  - Community acceptability of cost.
- Affordability of an integrated approach
  - ie: organics → compost. \$\$
  - Recyclables → reprocessed. \$\$
  - HHW collection → disposal/treatment.
  - Residuals (Plastics etc.) → Waste to energy \$\$
- Organics – ie: compost and product
  - If there is no market for composted organics – why produce end product.
  - Is waste to energy to play a role until markets are developed.
- If we divert organics, recyclables etc. is waste to energy the best way to generate electricity or is it better to have an inert landfill and better way to produce energy. ie: solar.
- Viability for Small Communities
  - Small unit variability and don't have recycling yet across NT.
- Recycling Waste material for Energy production. What methods are available and viable and what are the minimum quantities.

- Process – fuel depending on location
  - Remote → what's available
  - Eg: xxx<sup>2</sup> paper, waste oil.
- Pre sorting of Material
  - Quality of Material
- Loss of organics ie: not returned to soils
- Dangerous Materials
  - Control of Pollution
- EfW only one facet of range of options
  - Recycling mulching etc
- Role of transport/collection in waste management
- Energy used to create waste to energy.
- Links of Commercial parameters → sustainability factors
- Transport efficiency
  - Net sustainability benefit